

2008 Innovation Grant project

Rain-Flo Water Wheel Transplanter, Plastic Mulch and Row Cover

Contact information:

Arthur Keyes

Po box 3361

Palmer, AK 99645

amkeyes@mtaonline.net

907-746-3371

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In my effort to extend the season I purchased a Rain Flo model 1600 Water Wheel Transplanter, plastic mulch and row cover.

The Water Wheel Transplanter allowed us to reduce our transplanting time from weeks to days. In previous years we would start our transplants in the greenhouse from late April thru Mid May. It would be ideal to transplant into the field approximately two weeks after starting the plants. It has never been possible to plant at the ideal time due mainly to scheduling restrictions with my labor. With the Water Wheel Transplanter I was able to eliminate most of my labor issues. It also increased my ability to plant at the appropriate times. I planted on raised beds that are 24" wide and 6" high. I used 4' wide black plastic mulch. I planted a variety crops; Sweet Corn, Summer Squash, Winter Squash, Strawberries and few other miscellaneous crops. When the beds were planted I then used 5' wire to create hoops that covered the bed then I cover the beds using a 6' row cover, effectively creating a mini greenhouse.

My Labor in the spring consists mainly of high school kids who have schedule limitations. The Water Wheel Transplanter has allowed me to complete the bulk of my planting on the weekends when my labor is available. In past years I would start planting on May 15 and try and have everything planted by the end of the first week of June. The limited amount of hours that my labor is available has been a major factor in the past as to when I get done planting my fields. Transplanting on my farm previously was accomplished by crawling on hands and knees putting the plants into the bed. In good weather working by hand it takes three people one week to plant a $\frac{1}{4}$ acre of corn. It takes the same crew three days to plant two acres of squash.

The "Rain-Flo" Model 1600 is a transplanter for setting plugs, pots, or bare root plants through plastic mulch. It will plant on flat or raised beds. Plant spacing is adjustable from 12" to 36" simply by adding or removing spikes on the planting wheel. It has capacity for three people to sit and place the plants through the plastic into the bed. It reduces the fatigue on the back and the knees and increases the speed at which a person can operate.

Using the Water Wheel Transplanter four people were able to plant $\frac{1}{4}$ acre of corn in about five hours. At minimum we were able to gain an extra week for the corn to grow. Three people were able to plant two acres of squash in

about five hours. The transplanter has also increased my ability to find workers who are willing to do the transplanting.

The increased efficiency has reduced our labor costs, increased our ability to find workers and gained us an additional week to two weeks of production.

Corn and Squash are warm weather crops that depend on heat for growth. The 2008 growing season in the Mat-Su region was the coolest this century. As a result of the cool weather yields of squash and corn were reduced from the previous season. I don't think the yields are an accurate way to measure the success of this project. I think the reason for the reduced yields is weather related and the increased efficiency that the transplanter, plastic mulch and row covers create are the principle reason we had any production.

I plant between 2 ½ acres to 3 ½ acres each year, with a crew of three people and myself it takes two to three weeks. This year with the water wheel transplanter it took days instead of weeks.

Without the use of the Water Wheel Transplanter, plastic mulch and row covers I don't believe there would have been a corn crop for me to sell in 2008.

In August I gave a presentation at the college about the Water Wheel Transplanter and my experience using it this past summer. I discussed the different options available for the Water Wheel Transplanter and I demonstrated the adjustments of the spike spacing.